

## **ROUTE PROTECTION IN A COMMUNICATION NETWORK**

### **ABSTRACT**

5 A communications network comprises a lower transport layer and an upper overlay  
incorporating a plurality of routers. Adjacencies are defined between respective pairs of  
routers. Path protection is provided by defining a software model of the overlay of the  
network and defining in the model a hierarchy of protection levels for the main path.  
Each protection level is characterised by a respective set of one or more broken  
10 adjacencies in the model, the adjacencies to be broken being determined from a  
knowledge of the underlying topology. A protection level is selected and a protection  
path avoiding the broken adjacencies associated with that protection level is calculated.  
If this calculated path is not available in the real network, a lower protection level in the  
hierarchy is selected and the protection path calculation repeated. The process  
15 continues until a suitable protection path is identified.